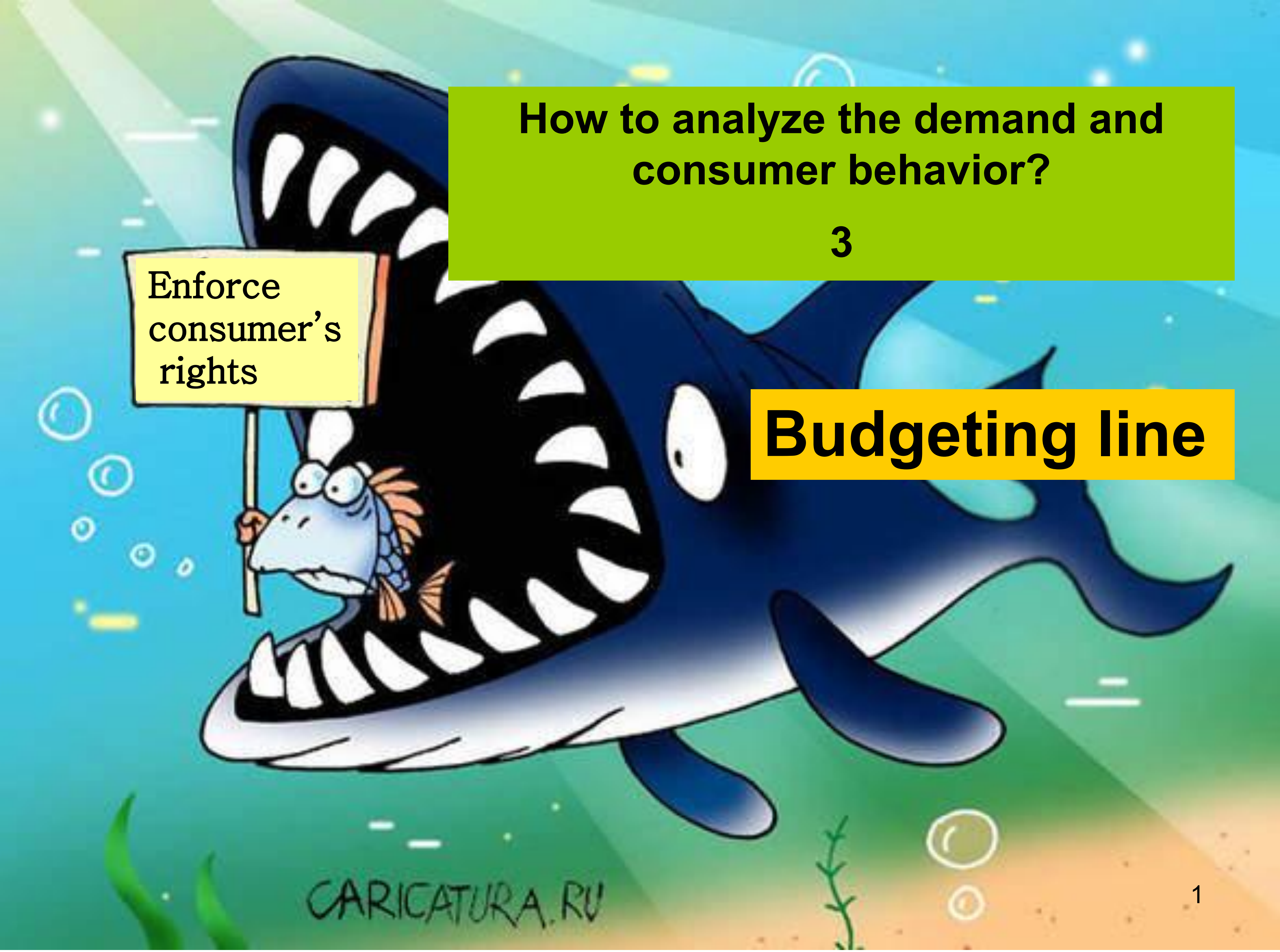
# How to analyze the demand and consumer behavior?

**3**

## Budgeting line



**The ability of consumers to buy products X and Y is determined by budget constraints, which may be expressed graphically by <u>the budgeting line</u>**

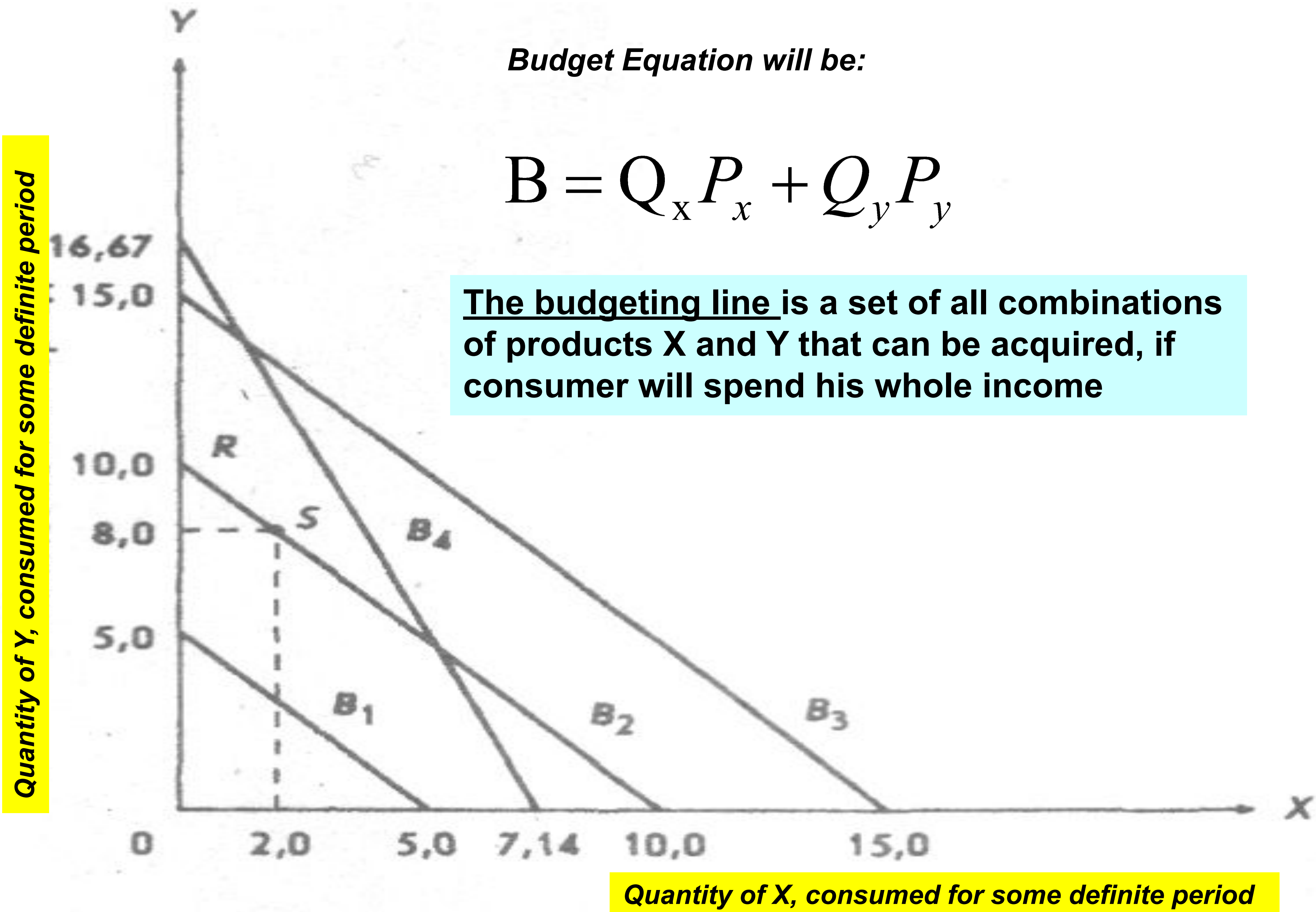
**Assume that the consumer has a limited amount of money, which he will spend on the products X and Y**

**Suppose he'll spend the entire sum**

***Budget Equation will be:***

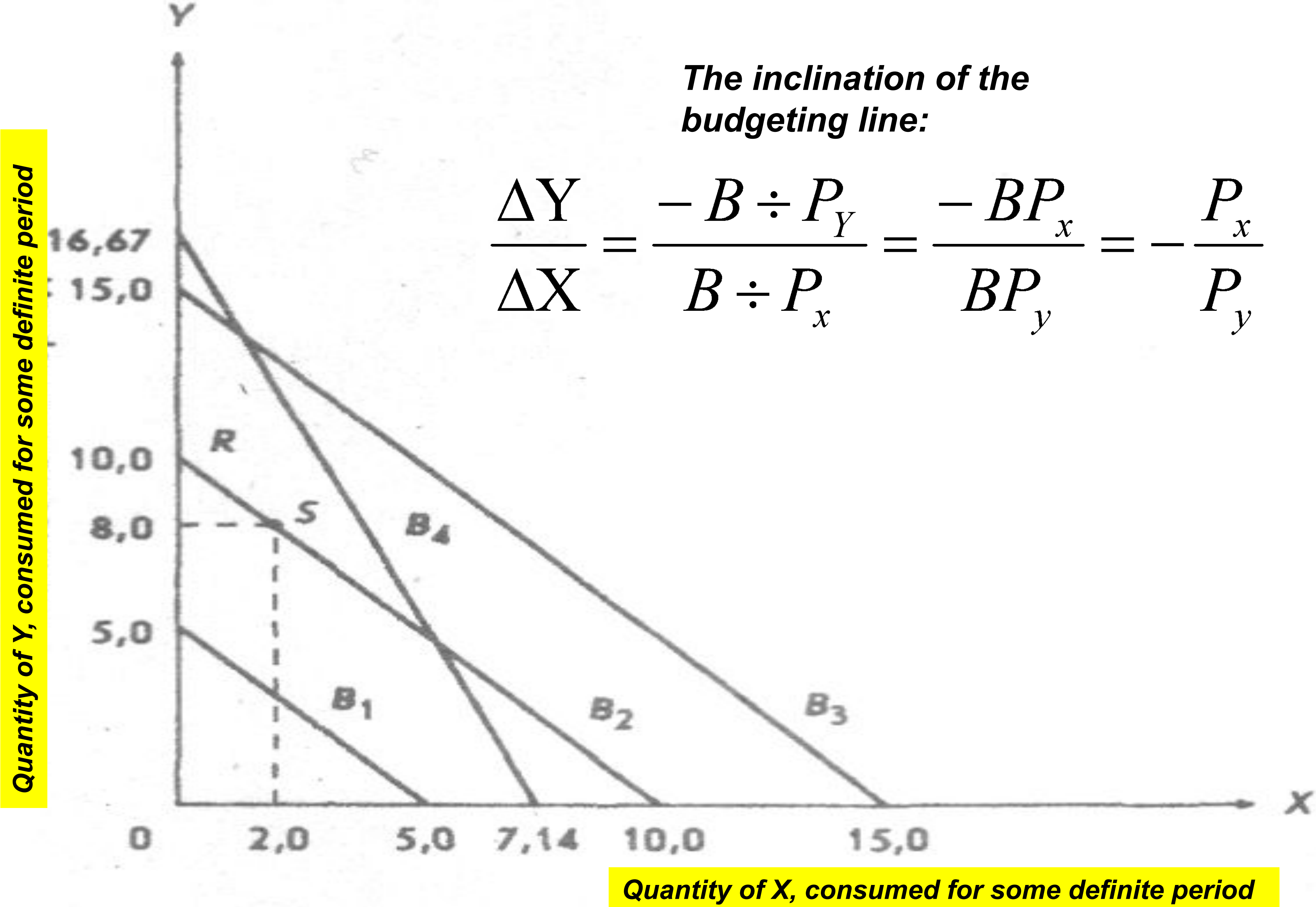
$$B = Q_x P_x + Q_y P_y$$

**<u>The budgeting line</u> is a set of all combinations of products X and Y that can be acquired, if consumer will spend his whole income**



***The inclination of the budgeting line:***

$$\frac{\Delta Y}{\Delta X} = \frac{-B \div P_Y}{B \div P_x} = \frac{-BP_x}{BP_y} = -\frac{P_x}{P_y}$$

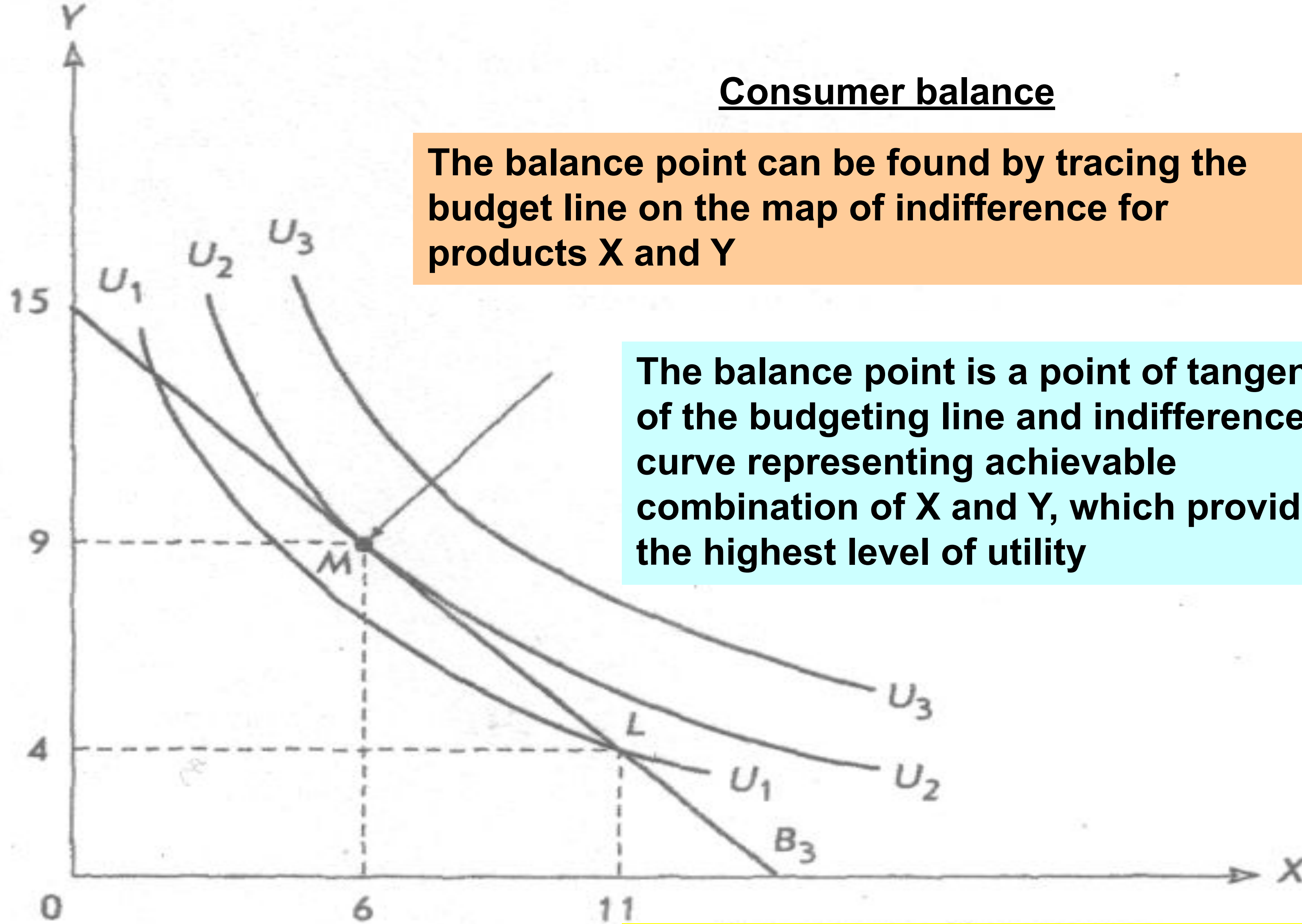


## Consumer balance

The balance point can be found by tracing the budget line on the map of indifference for products X and Y

The balance point is a point of tangency of the budgeting line and indifference curve representing achievable combination of X and Y, which provides the highest level of utility

*Quantity of Y, consumed for some definite period*




*Quantity of X, consumed for some definite period*

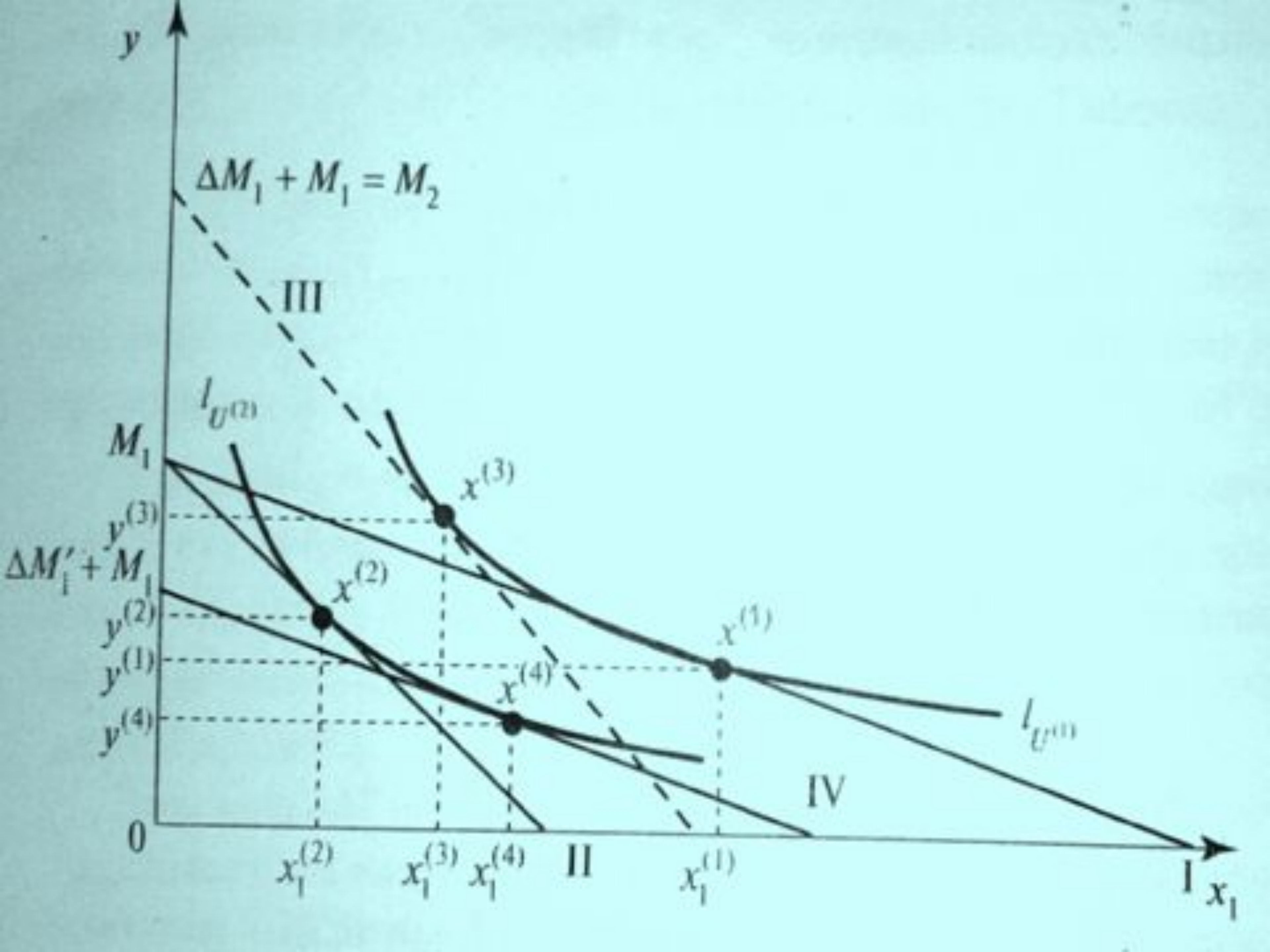
**At the tangency point the inclination of the indifference curve is equal to the inclination of the budgeting line:**

$$-\frac{\mathrm{MU}_{\mathrm{x}}}{\mathrm{MU}_{\mathrm{y}}} = -\frac{P_x}{P_y}$$

$$\frac{\mathrm{MU}_{\mathrm{x}}}{P_x} = \frac{\mathrm{MU}_{\mathrm{y}}}{P_y}$$

**This is the same model, which provides a quantitative approach**

**The model suggests that the total utility of consumption is maximized if the consumer's income is distributed so that the marginal utility per 1 ruble of expenses for each product is the same**


y
$\Delta M_1 + M_1 = M_2$
III
$I_{U^{(2)}}$
$M_1$
$x^{(3)}$
$y^{(3)}$
$\Delta M_1' + M_1$
$x^{(2)}$
$y^{(2)}$
$x^{(1)}$
$y^{(1)}$
$x^{(4)}$
$y^{(4)}$
$I_{U^{(1)}}$
IV
0
$x_1^{(2)}$
$x_1^{(3)}$
$x_1^{(4)}$
II
$x_1^{(1)}$
I
$x_1$

$$\mathrm{TU}_{\mathrm{B}} = 400Q_B - 10Q^2{}_B$$

$$\mathrm{TU}_{\mathrm{C}} = 550Q_C - 20Q^2{}_C$$

$$\mathrm{TU}_{\mathrm{F}} = 200Q_F - 5Q^2{}_F$$

**$P_B$ = 4$   $P_C$ = 2,50$   $P_F$ = 4$**

***How to spend 100$ to maximize the total utility?***